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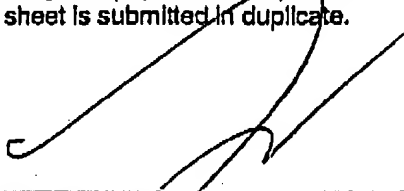
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**FACSIMILE TRANSMISSION****DATE:** February 2, 2007**TO:** EXAMINER ALEXANDER KOSOWSKI**FACSIMILE NO.:** 571-273-8300**FROM:** John G. Posa**PAGES TRANSMITTED (INCLUDING COVER SHEET):** 10**ORIGINAL DOCUMENTS WILL** \_\_\_\_ **/ WILL NOT** XX **FOLLOW BY MAIL****RE:** SN 09/916,976**MESSAGE:**

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<b>TRANSMITTAL OF APPEAL BRIEF</b>			Docket No. POM-12602/29	
In re Application of: Jyoti Mazumder et al.				
Application No. 09/916,976-Conf. #8577	Filing Date July 27, 2001	Examiner A. J. Kosowski	Group Art Unit 2125	
Invention: FABRICATION OF BIOMEDICAL IMPLANTS USING DIRECT METAL DEPOSITION				
<b><u>TO THE COMMISSIONER OF PATENTS:</u></b>				
Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: <u>December 6, 2006</u> .				
The fee for filing this Appeal Brief is <u>\$ 250.00</u> .				
<input type="checkbox"/> Large Entity <input checked="" type="checkbox"/> Small Entity				
<input type="checkbox"/> A petition for extension of time is also enclosed.				
The fee for the extension of time is _____ .				
<input type="checkbox"/> A check in the amount of _____ is enclosed.				
<input type="checkbox"/> Charge the amount of the fee to Deposit Account No. _____ . This sheet is submitted in duplicate.				
<input checked="" type="checkbox"/> Payment by credit card.				
<input checked="" type="checkbox"/> The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. <u>07-1180</u> . This sheet is submitted in duplicate.				
 _____ John G. Posa Attorney Reg. No.: 37,424 GIFFORD, KRASS, SPRINKLE, ANDERSON & CITKOWSKI, P.C. 2701 Troy Center Drive, Suite 330 Post Office Box 7021 Troy, Michigan 48007-7021 (734) 913-9300			Dated: <u>February 2, 2007</u>	

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PTO/SB/17 (07-08)

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Effective on 12/01/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).		<b>Complete If Known</b>					
<h1 style="margin: 0;">FEE TRANSMITTAL</h1> <h2 style="margin: 0;">For FY 2006</h2>		Application Number 09/916,976-Conf. #8577	Filing Date July 27, 2001				
		First Named Inventor Jyoti Mazumder	Examiner Name A. J. Kosowski				
		Art Unit 2125	Attorney Docket No. POM-12602/29				
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27							
<b>TOTAL AMOUNT OF PAYMENT</b>	(\$) 250.00						
<b>METHOD OF PAYMENT</b> (check all that apply)							
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<input checked="" type="checkbox"/> Deposit Account            Deposit Account Number: <b>07-1180</b> Deposit Account Name: <b>Gifford, Krass, Sprinkle, Anderson &amp; Citkowski,</b>							
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)							
<input type="checkbox"/> Charge fee(s) indicated below		<input type="checkbox"/> Charge fee(s) indicated below, except for the filing fee					
<input checked="" type="checkbox"/> Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.18 and 1.17		<input checked="" type="checkbox"/> Credit any overpayments					
<b>FEE CALCULATION</b>							
<b>1. BASIC FILING, SEARCH, AND EXAMINATION FEES</b>							
Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	_____
Design	200	100	100	50	130	65	_____
Plant	200	100	300	150	160	80	_____
Reissue	300	150	500	250	600	300	_____
Provisional	200	100	0	0	0	0	_____
<b>2. EXCESS CLAIM FEES</b>							
Fee Description	Small Entity Fee (\$)	Fee (\$)					
Each claim over 20 (including Reissues)	50	25					
Each independent claim over 3 (including Reissues)	200	100					
Multiple dependent claims	360	180					
Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)	
7	- 20 -	x	=				
HP = highest number of total claims paid for, if greater than 20.							
Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)				
1	- 3 -	x	=				
HP = highest number of independent claims paid for, if greater than 3.							
<b>3. APPLICATION SIZE FEE</b>							
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)			
_____	- 100 -	/50	(round up to a whole number) x				
<b>4. OTHER FEE(S)</b>							
	Fee Paid (\$)						
Non-English Specification, \$130 fee (no small entity discount)							
Other (e.g., late filing surcharge), 2401 Notice of appeal	250.00						
<b>SUBMITTED BY</b>							
Signature 	Registration No. (Attorney/Agent) 37,424	Telephone (734) 913-9300					
Name (Print/Type) John G. Pose		Date February 2, 2007					

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of: Mazumder et al.

Serial No.: 09/916,976

Group No.: 2125

Filed: July 27, 2001

Examiner: A. Kosowski

For: FABRICATION OF BIOMEDICAL IMPLANTS USING DIRECT METAL  
DEPOSITION**APPELLANTS' APPEAL BRIEF UNDER 37 CFR §41.37**Mail Stop Appeal Brief  
Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

**I. Real Party in Interest**

The real party and interest in this case is The P.O.M. Group, a Michigan corporation, by assignment.

**II. Related Appeals and Interferences**

There are no appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. Status of Claims**

The present application was filed with 8 claims. Claim 2 has been canceled. Claims 1 and 3-8 are pending, rejected and under appeal. Claim 1 is the sole independent claim.

**IV. Status of Amendments Filed Subsequent to  
Final Rejection**

No after-final amendments have been filed.

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**V. Summary of Claimed Subject Matter**

Independent claim 1 provides a method of fabricating at least a portion of a biomedical implant (as shown, for example, in Figure 1). The preferred method includes the steps of receiving digital data indicative of patient physiology (Figure 2, step 202), constructing a computer-aided design (CAD) file in accordance with the digital data (Figure 2, step 204), generating a tool path (Figure 2, step 206), and fabricating the implant or portion thereof by depositing material increments along the tool path using a closed-loop direct metal deposition (DMD) process of the type wherein a laser beam is focused onto a workpiece to create a melt pool into which powder is injected. A closed-loop process is used, wherein the size of the increments are controlled through optical monitoring (Figure 2, steps 212, 214) (Specification, page 5, line 2 to page 6, line 12).

**VI. Grounds of Objection/Rejection To Be Reviewed On Appeal**

A. The rejection of claims 1 and 3-8 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,405,095 to Jang et al. in view of U.S. Patent Publication No. 2002/0007294 to Bradbury et al., and further in view of U.S. Patent No. 6,122,564 to Koch et al.

**VII. Argument****A. Claim 1, Wherein Claims 3-8 Stand/Fall with Claim 1.**

Claim 1 stands rejected under 35 U.S.C. §103(a) over Jang et al. ('095), further in view of Bradbury et al. (U.S. Publication Serial No. 2002/0007294), further in view of Koch ('564). The Examiner concedes that Jang does not teach "that biomedical implants are being fabricated, that the digital data obtained from CT or MRI scans is related to patient physiology, nor that the size of the increments are controlled through optical monitoring." Nevertheless, the Examiner argues that it would have been obvious to modify Jang "since this would increase the responsiveness of the implant preparation and surgical planning process, would allow customized construction of implants, and would yield superior dimensional matching to a patient's body, which should promote superior tissue and bone ingrowth," citing Bradbury at paragraphs [0008] and [0051]. Referring first to the paragraphs of Bradbury cited by the Examiner, paragraph [0008] *refers only to the system of Bradbury*. It does not speak to the combination of Jang, Bradbury et al. and Koch. Thus, the teachings of this paragraph do

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not carry over beyond the application in which it is contained. The same holds true with paragraph [0051] which, again, refers only to the system and method of Bradbury et al.

Additionally, there is no factual evidence whatsoever from the record in support of the Examiner's rationale for rejection. The Examiner states that the proposed combination "would increase the responsiveness of the implant preparation and surgical planning process." How does the Examiner know this? Similarly, how does the Examiner know that the combination "would allow customized construction of implants, and would yield superior dimensional matching to a patient's body"? The system of Bradbury already allows for the customized construction of implants, and according to Bradbury, by itself, yields superior dimensional matching. Thus, there appears to be no reason or justification for the proposed combination. Finally, the Examiner argues that the proposed combination would "promote superior tissue and bone ingrowth." Again, these remarks by Bradbury have only to do with Bradbury, and do not provide factual evidence for the proposed combination.

With regard to optical monitoring, the Examiner argues that it would have been obvious to modify Jang "since optical detection means can be utilized to monitor physical dimensions of deposits, and a feedback controller can utilize this to adjust a laser to thereby control the rate of material deposition." However, while this may be the reason why *Applicant* prefers such a technique, there is no teaching or suggestion *from the prior art* in support of the proposed combination with respect to Applicant's claims, which are formulated in combination. Accordingly, *prima facie* obviousness has not been established.

The Examiner's other conclusions are as well unfounded. That it would be obvious to modify Jang "since this would allow a part to be inspected at a later point after fabrication," refers only to Bradbury at paragraph [0031]. "To fabricate scaffold structures in the method taught ... would allow superior dimensional matching to a patient's body which would promote healing," is specific to the teachings of Bradbury, and do not carry over to the proposed combination.

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Conclusion

In conclusion, for the arguments of record and the reasons set forth above, all pending claims of the subject application continue to be in condition for allowance and Appellants seek the Board's concurrence at this time.

Respectfully submitted,

By: \_\_\_\_\_

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APPENDIX ACLAIMS ON APPEAL

1. A method of fabricating at least a portion of a biomedical implant, comprising the steps of:
- receiving digital data indicative of patient physiology;
  - constructing a computer-aided design (CAD) file in accordance with the digital data;
  - generating a tool path;
  - fabricating the implant or portion thereof by depositing material increments along the tool path using a closed-loop direct metal deposition (DMD) process of the type wherein a laser beam is focused onto a workpiece to create a melt pool into which powder is injected; and
  - wherein the size of the increments are controlled through optical monitoring.
3. The method of claim 1, wherein the materials include one or more metals or ceramics.
4. The method of claim 1, wherein the materials include zirconia or alumina.
5. The method of claim 1, further including the step of fabricating the implant out of different materials using the same DMD process.
6. The method of claim 5, wherein the different materials include metals, ceramics, or polymers.
7. The method of claim 1, further including the step of embedding one or more sensors into the implant for diagnostic or data-acquisition purposes.
8. The method of claim 1, further including the step of fabricating a scaffold structure suitable to bone ingrowth or ongrowth using the DMD process.

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APPENDIX BEVIDENCE

None.

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APPENDIX C  
RELATED PROCEEDINGS

None.

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